



Bone Lake delisting indicates watershed-wide improvements



Five more lakes within Comfort Lake-Forest Lake Watershed District poised for removal from state’s impaired waters list as early as 2026

SCANDIA — Bone Lake’s removal from the state’s impaired waters list this year reflects the Comfort Lake-Forest Lake Watershed District’s (CLFLWD) success implementing phosphorus-reduction projects identified through sequential diagnostic monitoring.

Water quality improved decades faster than anticipated in 2004, when Bone

Lake was listed as impaired for aquatic recreation because of excess nutrients. The 220-acre Washington County lake has met the state standard for phosphorus levels each year since 2015. Water clarity — once limited to about 12 inches — has shown improvements since 2011.

“In addition to Bone Lake, the other lakes on the impaired waters list are

*Bone Lake’s removal from the state’s impaired waters list in April followed 20 years of targeted conservation work within the Comfort Lake-Forest Lake Watershed District, including BWSR Clean Water Fund-backed phosphorus-reduction projects. The 220-acre recreational lake in Washington County is stocked with walleye. Erv Weinkauff of Forest Lake, **top**, prepared to launch from Bone Lake’s public access on May 14. He said he knew the fish were biting because he could see people fishing from shore, their fishing poles bending. So he returned with his boat. **Photo Credits:** Ann Wessel, BWSR*



Left: Erosion control measures and native plants were installed after 1,480 cubic yards of sediment was removed from this half-acre wetland bordering Moody Lake in February. The material was spread on neighboring cropland. This wetland restoration will keep an estimated 47 pounds of phosphorus out of Moody Lake each year. Moody Lake drains to Bone Lake. **Middle:** Doug Tovos of the Comfort Lake-Forest Lake Watershed District Board of Managers, left, and CLFLWD Administrator Mike Kinney discussed the Clean Water Fund-backed project. Tovos donated easements granting the CLFLWD 25 years' access to the project area and four years' temporary access to another 0.22 acre. **Right:** A now-empty dairy barn stands next to the wetland. [VIDEO](#)

seeing an improved trend,” said CLFLWD Administrator Mike Kinney. “With access to the Clean Water Funds, and doing our sequential diagnostic monitoring, we’ve been able to have targeted projects that are improving water quality.”

Five more lakes within the watershed district could be delisted as soon as 2026, the next time the U.S. Environmental Protection Agency updates the list.

Water-quality monitoring data show Comfort, Little Comfort, Moody, School and Shields lakes are meeting state water-quality standards. Water-quality improvements here translate to improvements downstream. From Bone Lake, water flows through Birch, School, Little Comfort and Comfort lakes to the Sunrise and St. Croix rivers.

Sequential diagnostic monitoring — which relies less on computer modeling projections, more on water-quality samples to reveal what is happening on the landscape — pinpointed priority sites.

“Through this process, we’ve been able to identify a very small number of projects that have a big impact,”



“One of our main goals is to improve and protect water resources. We did — not too many years ago — think this was going to be a much longer timeframe.”

— Mike Kinney,
Comfort Lake-Forest Lake Watershed District administrator

Kinney said. “Our approach has been trying to get 80% of the improvements through 20% of the effort and cost.”

Four Clean Water Fund grants from the Minnesota Board of Water and Soil Resources (BWSR) totaling more than \$1 million have supported nearly \$1.5 million in the [CLFLWD's](#) water-quality improvement work that contributed to Bone Lake’s April 25, 2024, delisting.

Water-quality improvements contributed to an estimated 786-pound annual reduction in phosphorus entering Bone Lake. One pound of phosphorus can produce up to 500 pounds of algae.

The largest reductions originated upstream from Bone Lake. Those included a 2017 wetland restoration bordering a former dairy barn. Over the decades, manure runoff had accumulated in the wetland.

Years after the cows were gone, the manure-filled wetland remained a source of nutrients to Moody Lake. That site accounted for 25% of the volume but 78% of the phosphorus load entering Moody Lake.

“All the water draining into Bone Lake from various locations now is in a much cleaner state. Moody Lake in particular went from pretty much a pea-green state of water quality — over 160 milligrams per liter — to now below the state standard,” Kinney said.

The most recent Moody Lake project — which excavated decades worth of manure from two other wetlands, and intercepted runoff from Moody Lake Park in Chisago Lake Township — achieved the 12% phosphorus reduction needed for Moody Lake to achieve its water-quality goals.



MEETING STANDARDS:

Removal from the impaired waters list requires meeting the standard for phosphorus levels and either Secchi disk readings, which measure clarity, or Chlorophyll-a levels, a measure of how much algae is growing in a water body, for five consecutive years.

Bone Lake has consistently met state standards for phosphorus (40 parts per billion [ppb]) and Secchi disk readings (4.6 feet).

For the 10-year period ending in 2023, phosphorus levels averaged 32.2 ppb; Secchi disk readings averaged 5.1 feet. Five-year averages were 25.1 ppb and 5.8 feet.

Those monitoring results are part of the CLFLWD’s [2023 Water Monitoring Report](#).

CLFLWD Board Member Doug Tovas lives on Moody Lake, where a now-empty dairy barn stands on the edge of a half-acre wetland bordering the lake. His was one of the most recent wetland restorations — a \$70,000 project that removed 1,480 cubic yards of sediment, spread it on neighboring cropland, and installed native plants and erosion control. Work finished in February. It will keep an estimated 47 pounds of phosphorus out of the lake each year.

“To come out here at a time when I saw the lake going down in quality, to be involved in bringing it back to the highest standards possible is really exciting,” Tovas said. “It’s part of this larger network that we’re trying to help get cleaned up. And if you start at the top and get the top cleaned up, it helps every other lake down below.”

He moved to the site about 20 years ago, and became more aware of water-quality issues when he started collecting Moody Lake water samples for the CLFLWD.

“I just keep thinking about what are we handing our kids. And I want them to get something better than what was given to me. And this is one way I can be part of that process,” Tovas said.

The restored wetland quickly filled with water. This spring, Tovas observed nesting Canada geese and sandhill cranes.

Downstream on Bone Lake, on a warm May afternoon a scene unfolded that would have been hard to imagine



Plants emerged through erosion control fabric in May 2024 at the site of a Clean Water Fund-supported Moody Lake capstone project, which included intercepting runoff from this location in Moody Lake Park, Chisago Lake Township. Moody Lake flows to Bone Lake.



“ I believe the improvement over the next five to 10 years will be driven by those shoreline restoration projects. ”

— Tom Furey,
Bone Lake Association president

20 years ago: A group of anglers fished from shore just off the county road. At the public access, a fisherman who had noticed their success launched his boat. A student biking home from school stopped off for a swim.

“The whole approach that our district has taken has been one of researching and finding data and building the solutions on the data that we find. We go after the most effective way of solving the problem of water quality. Being on the board, that’s very reassuring because we’re putting money to its best use possible,” Tovas said.

Bone Lake Association President Tom Furey, who helps with stream and lake monitoring, marked a

water-quality-improvement milestone this summer when Secchi disk readings showed water clarity at nearly 14 feet — the best on record for the lake.

“(The delisting) means a great deal to me, and I am proud of the effort that CLFLWD and fellow lakeshore owners have put in. As a relatively new homeowner on the lake, I feel more the beneficiary than a major contributor, but I am looking forward to being an active shareholder in the continuous improvement,” Furey said.

When Furey bought a cabin on Bone Lake in 2017, its proximity to Minneapolis was part of the appeal. He retired this summer after a career as a manufacturing engineer in the medical

device industry. Furey restored his shoreline and uplands with a CLFLWD cost-share grant, and encourages lakeshore neighbors who are considering similar work. He became a [Minnesota Water Steward](#), and joined the CLFLWD Citizen Advisory Committee.

“After more than seven years, we feel we made a great choice, and we hope that our children and grandchildren can enjoy the beautiful lake for years to come,” Furey said.

Bone Lake has seen secondary benefits resulting from the improvement in water quality.

“(It) greatly improved the fisheries, which had a large economic impact. It provides more habitat, both in near-shore and onshore area. We have a really very strong relationship with the lake association to improve shoreline restoration activities. They’re an important part to that component as well.”

In addition to BWSR and the EPA, project partners have included the Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, Washington County, the Washington Conservation District, the city of Scandia and the Lions Club.

As the CLFLWD continues to pursue projects that improve and preserve water quality, it is keeping tabs on chloride levels, and is considering flood mitigation measures.

Written by Ann Wessel, BWSR conservation marketing coordinator



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